New tools for studying psychotherapies

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Background

The Psychotherapy Practice Based Research' Network (PPBRN, Thurin and al., 2007) is organized in 3 sub-groups, Alzheimer, Borderline and Autism, the last one being the most active. The methodology of the network deals with process-outcome intensive case studies, fitted in the innovative field of Mixed Methods, which combines quantitative and qualitative approaches.

Right now, 41 autism patients have been included and more will follow, one hundred being the ultimate objective. In order to take full advantage of the repeated measures of mixed data, a Descriptive Analysis Plan (DAP) was specially designed for the network. The DAP uses **R** ad hoc functions which combine scores and short sentences. These functions visualize through time the whole therapy process dynamic. The DAP uses also Principal Component Analysis (PCA) and hierarchical clustering to create relevant clinical subgroups.

Aim/Purpose

The Descriptive Analysis Plan (DAP), coupled with a functions library, written with **R** uses 21 steps and three levels of analysis:
- an intensive case study level designed with **R** ad hoc functions;
- group and subgroups levels using **R** functions from the cluster and FactoMineR packages;
- a case by case comparison level, both patients being in the same subgroup or in different subgroups designed with **R** ad hoc functions.

Today all 41 patients have been studied as intensive cases and united in a solid psychotherapies data base. As more patients are added, these already existing cases compose an efficient reflection mean to realize the two aggregating levels.

Method

The study of each case starts with the extensive notes of the psychotherapist during the first three talks, and then in two sessions at 2, 6 and 12 months, completed by a quantitative evaluation of changes with validated instruments: Behavioral Summarized Scale (BSE, Barthelemy and al., 1997), Autism Psychodynamic Evaluation of Changes (APEC, Haag and al., 2010), Child Psychotherapy Process Q-sort (CPQ, Schneider and Jones, 2007).

The complete versatility and modularity of **R** gives the programmer all the tools needed to explore and analyze the patient's progress through time. Repeated measures of the BSE, APEC and CPQ scores, as well as details about their textual translation provide the programmer objective elements of description of the psychotherapeutic process.

The patients' scores are followed at 2, 6 and 12 months and related to the main characteristics of the psychotherapy. The first steps of the DAP present CPQ items subsets data frames and are purely descriptive. The second steps use hierarchical clustering and try explaining more precisely the patients' trajectories with 3 or 4 measures through time. Finally these trajectories are classified into 9 classes for each process variable and result score and compared to one another.

Results/Discussion

The last steps of the DAP will follow different patients subgroups through time as a whole and compare subgroups between one another. Already, with the group of 41 patients used to design the DAP, some patients showed significant progress with the BSE and APEC instruments, some a lot more than others.

Defining good clinical criteria through pertinent clustering, selecting similar cases and comparing patients in each clinical subgroup will give some answers to the PPBRN therapists on how and when the therapy works best.